Water Use Efficiency

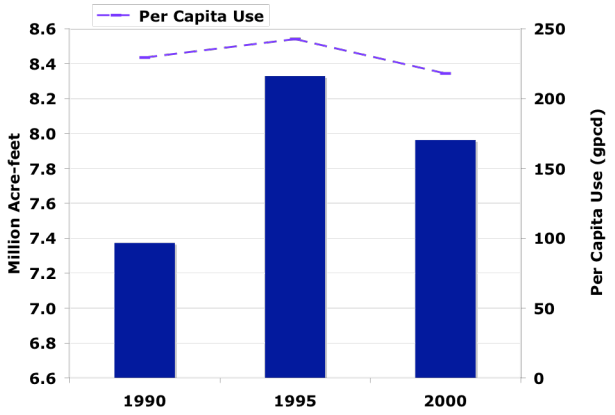
Water Use Efficiency Objectives

The goal of the Water Use Efficiency (WUE) Program is to help locals implement water conservation and recycling projects that contribute to CALFED's water supply reliability, water quality, and ecosystem restoration goals. These practices include:

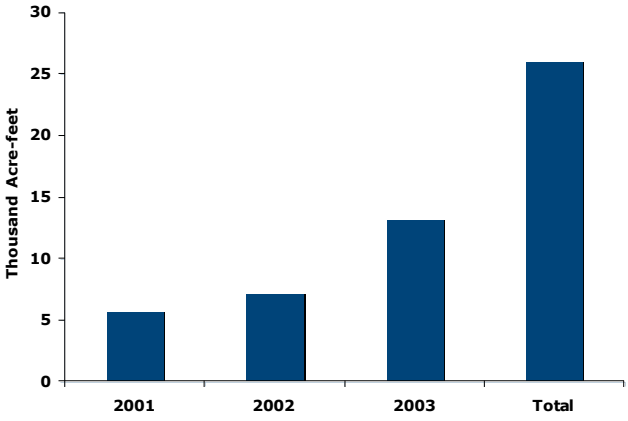
- Agricultural water conservation
- Urban water conservation
- Water recycling

Urban Water Conservation – Although the graph at right shows an apparent increase in urban water use in California, supporting data are not definitive. Several important factors affect the change in urban water use over time: population growth, per-capita water use, weather variability, and cycles in economic activity. However, two facts do seem clear: population growth in California continues; and the growth in urban water demand can be moderated by reductions in per-capita use rates. Urban water conservation is the primary tool of local water purveyors to reduce demand.

The WUE Program has funded urban water conservation grants to local partners for feasibility studies and implementation projects throughout the state. For the first three years of the program, over 25,000 acre-feet per year are expected to be conserved from funded urban WUE projects (see graph at right). These savings represent a reduced need for new water supplies and, in many cases, a reduced demand for Bay-Delta system water. Demand reductions also have the benefit of reducing current and future wastewater disposal costs. As California's population grows, the WUE program intends to maintain and expand this achievement. Cost-effective WUE projects save money by avoiding expenditures on new water supplies and they support environmental restoration by reducing demands on the Bay-Delta system.



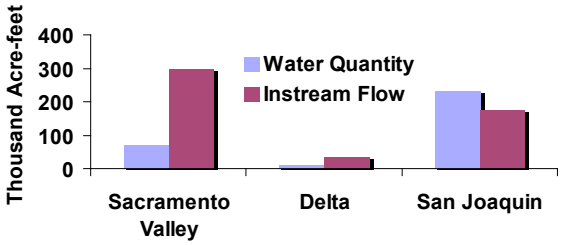
Urban water use and Statewide per-capita use, 1990- 2000 as reported by DWR Bulletin 160.



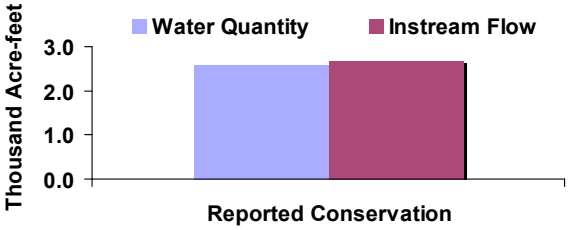
Expected savings in urban water use from CALFED PSP-funded projects, 2001-2003.

Agricultural Water Conservation – The agricultural WUE program has developed a list of benefits to the Bay-Delta system that can be achieved through water use efficiency, including benefits to water quantity (supply), in-stream flow, and water quality. Potential benefits to water quantity and in-stream flow were converted to quantified targets, called Quantifiable Objectives. The program estimated quantities of in-stream flow benefits that could reasonably be achieved through changes in the timing and location of agricultural surface water diversions and return flows. Water quantity benefits can be achieved by reducing flows to salt sinks (such as saline groundwater) and by reducing unwanted plant evapotranspiration. The agricultural WUE program can help achieve these benefits by funding and supporting district-level and on-farm water conservation programs.

The CALFED WUE program funded a small number of grants to local partners for feasibility studies and implementation projects in 2001. Quantified savings expected from funded agricultural WUE projects was less than 3,000 acre-feet per year. The expected savings were split about evenly between water quantity and in-stream flow. Available funding has limited the effectiveness and scope of the agricultural WUE program to date. The program intends to fund $33 million per year in projects and on-going programs to achieve agricultural water savings. This represents a substantial increase over recent spending, and will provide significant benefits for in-stream flow, water quality and water supply.



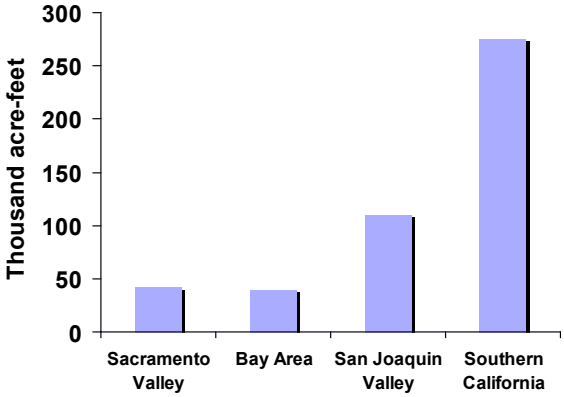
Quantifiable Objectives for in-stream flow and water quality.



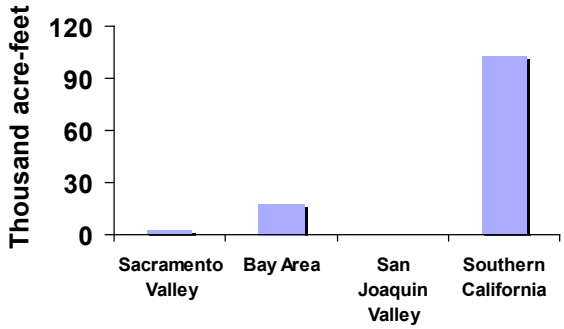
Expected savings in agricultural water use from CALFED funded projects. Only one year of grant funding was available for agricultural conservation

Water Recycling - Recycled water already plays an important role in California. In 2000, over 540,000 acre-feet of water was recycled – the majority in southern California.

Funding for local water recycling has been provided to projects under construction in several regions. These projects are expected to add almost 125,000 acre-feet of additional annual capacity. The recycling component of the Water Use Efficiency Program's goal is to add an additional 300,000 acre-feet of capacity by 2014, and a total of 500,000 to 1 million acre-feet of capacity between now and 2030.



Annual volume of recycled water as reported to the SWRCB in 2000.



Expected additional recycled water expected from projects under construction.

Next Steps: Many water conservation and recycling grant recipients have not been able to determine actual savings over the last four years. Water saved from recycling is relatively easy to measure, but savings from water conservation is inherently difficult to measure (i.e., difficult to measure how much less water was used compared to the condition of WUE projects not being implemented). Good estimates of water savings require other factors affecting water use be accounted for (weather, for example). Better estimates will require improved measurement protocols, especially for agricultural water use, and good analytical approaches for sorting out WUE implementation effects from other effects. The WUE program has made particular efforts during its first four years to develop both capabilities (see list of accomplishments below).

Summary of Accomplishments: CALFED agencies provided more than $160 million in financial support through grants and loans and technical support for more than 200 different local water conservation and recycling projects. In addition, the program has made significant progress on a number of planning and administrative efforts, including:

- 31,000 acre-feet of conservation expected through urban conservation
- 15,000 acre-feet of conservation expected through agricultural conservation
- 43,000 acre-feet of water recycling expected
- Developed Authority-approved approach to measuring water use in California.
- Developed of a proposed urban BMP certification program; agricultural quantifiable objectives, and draft projections of water use efficiency.
- Coordinated planning efforts with the author's of the State Water Plan Update and storage modelers.

Water Use Efficiency Program Budget Summary, in Millions $

Element Task	Appropriations for FY 00-04 CALFED	Local	Subtotal	Task Group	FY 00-04 Subtotals	Objectives Supported
Agricultural Grants	$ 26.91	$ 6.11	$ 33.02	Agricultural	49.76	
Agricultural Loans	$ 9.12		$ 9.12			
Agricultural Technical Assistance	$ 7.62		$ 7.62			
Water Recycling Grants	$ 168.78	$ 357.95	$ 526.73	Recycling	542.11	
Water Recycling Loans	$ 13.70		$ 13.70			
Water Recycling Technical Assistance	$ 1.69		$ 1.69			
Oversight & Coordination	$ 2.10		$ 2.10	Science, Management, & Oversight/Coordination	6.813	
Quantifiable Objectives	$ 0.24		$ 0.24			
Science & Monitoring	$ 3.71		$ 3.71			
Urban Certifications	$ 0.36		$ 0.36			
Water Measurement	$ 0.41		$ 0.41			
Urban Grants	$ 53.49	$ 6.11	$ 59.60	Urban	69.65	
Urban Technical Assistance	$ 10.05		$ 10.05	$ 69.65		
Subtotal - Water Use Effeciency			**$ 668.34**			

Contributes to water supply reliability

Contributes to ecosystem objectives

Contributes to water quality objectives